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Post traumatic stress disorders (PTSD) and dental practice

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Introduction

As a military dental provider, it is important to have an awareness concerning post traumatic stress disorders (PTSD), a "signature injury" of service members returning from Iraq and Afghanistan.[1] Unlike conventional traumatic injuries, PTSD is not apparent on visual exam; however, PTSD patients often present with increased anxiety, fear, general arousal, pain and dysfunction which present management challenges for the dental health care team.

PTSD is categorized as an anxiety disorder and may develop following exposure to an event that is perceived to be life-threatening or traumatic, i.e. sexual or physical abuse, assault, serious accidents, natural disasters, terrorist attacks and combat.[2] The characteristics of PTSD fall into three distinct symptom clusters: 1.) intrusive memories or re-experiencing events, 2.) avoidance behaviors, and 3.) persistent elevated arousal.[2] Other symptoms may include mood disturbances, memory problems and cognitive difficulties.[3]

The likelihood of a military dental provider encountering a patient with PTSD is high. It is estimated that 1.5-1.64 million military personnel have been deployed to Iraq or Afghanistan since 2001.[1,4] A RAND Corporation study reported 14% of soldiers returning from the combat zone screened positive for PTSD.[1] Another investigation showed approximately 78% of injured personnel experienced mental health problems with PTSD being the most common diagnosis (44%).[1,4] An increased prevalence of PTSD is not unique to the Iraq and Afghanistan conflicts. A recent study found an 18.7% lifetime rate of PTSD for veterans of the Vietnam War.[5] By comparison, PTSD has a lifetime prevalence of 1-14% in the general population.[6]

In addition to affective symptoms, patients with PTSD often possess a variety of other comorbid conditions such as temporomandibular disorders, headache, fibromyalgia, gastrointestinal disorders and cerebrovascular disease.[5,7] PTSD patients also frequently present with comorbid chronic pain complaints. A 2007 report indicated that 66% of treatment-seeking veterans with PTSD had a chronic pain complaint at their initial evaluation.[5] Many PTSD patients experience difficulty coping and adapting to their pain.[6] It is clearly apparent that PTSD can negatively impact a patient's overall health status and challenge the ability of health care providers to provide effective symptom management.

Although the biology of PTSD is not fully understood, neurobiologic research has demonstrated problems with dyfunctional stress systems and altered limbic, paralimbic and prefrontal brain function. PTSD has been associated with decreased hippocampal volume, increased amygdalar response, diminished prefrontal cortex activity and changes in neurotransmitter systems.[8,9] All of the aforementioned provide the physiologic basis to explain the enhanced anxiety and fear seen in PTSD. Research has also shown a significant overlap between the neurobiology of PTSD and chronic pain.[10] Theories to explain the relationship between the two disorders suggest that the affective, physiologic and avoidance elements of PTSD may maintain and worsen chronic pain while the cognitive, affective and behavioral components of chronic pain may exacerbate PTSD.[9]

Clinical Considerations

Patients who develop PTSD may initially seek health care for physical rather than psychological complaints, thus the first provider they encounter might be in a dental setting.[11] Although dentists do not diagnose and treat PTSD, it is important that dental providers have a basic understanding of the risk factors and symptoms. Patients with a history of deployment or traumatic life events who also report problems with sleeplessness, anxiety, depression, mood changes, flashbacks or intrusive thoughts may have PTSD and should be referred to an appropriate medical or behavioral health provider for further assessment.[12]

With regard to orofacial pain complaints, PTSD is associated with higher levels of pain and affective distress, both of which can complicate clinical management.[11] This is of special importance considering the high prevalence of head pain in the military.[13] Head and neck injuries have been reported in one quarter of service members evacuated from the conflict in Afghanistan and Iraq.[14] The head was either the primary (32%) or secondary (22%) pain location identified in soldiers returning from Iraq.[15]

PTSD patients may have difficulty in describing or being aware of their emotions or mood. Likewise they may demonstrate a diminished capacity to employ adaptive and coping strategies.[9] Patients with PTSD and high levels of

anxiety may respond with increased fear and avoidance behaviors. When faced with arousing stimuli, such as pain or psychosocial stressors, they may exhibit disturbances in affective control and display increased irritability, anger, sense of loss or shame.[3] It is prudent therefore for providers to be mindful of both verbal and nonverbal interactions with PTSD patients and avoid sounding judgmental or condescending.[16] Additionally PTSD patients may have difficulties with sustained attention and working memory that impair long term recall.[17] It is important to ensure that such patients leave with written copies of any home care recommendations or post operative instructions for them to refer to later.[16]

It is estimated that approximately 80% of the United States population has some anxiety about dental treatment.[18] Due to their higher levels of anxiety, PTSD patients may require even more time and patience to establish a positive working relationship. As with all anxious patients, asking generalized questions such as "are there any parts of dental treatment that are particularly difficult for you?" or "is there anything we can do to make you feel more comfortable?" may help patients to better focus and respond in a more appropriate manner. Simple, subtle adjustments in the dental environment may improve a patient's sense of safety and self control. For example, it is not unusual for PTSD patients to perceive supine positioning in the dental chair or facing away from a room door as threats. Small changes in the arrangement of the dental operatory may help to reduce such threat cues. Taking breaks during prolonged procedures and establishing designated signals for "stop" are two other beneficial techniques to use with PTSD and other highly anxious patients.[16]

The prevalence of PTSD in the military population makes it important for dental providers to have a basic understanding of the disorder and refer symptomatic patients for evaluation. Dentists also need to be aware of the potential impact of PTSD on the provision of dental care in this special patient population, especially with regard to the management of anxiety and pain. Failure to recognize and address psychological distress concerns with PTSD can adversely affect treatment outcomes.[6]

References

1. Tanielian T, Jaycox LH. Invisible wounds of war: psychological and cognitive injuries, their consequences, and services to assist recovery. RAND Corporation 2008.
2. Bryant RA. Posttraumatic stress disorder and traumatic brain injury: can they co-exist? Clin Psychol Rev 2001 Aug;21(6):931-48.
3. Frewen PA, Lanius RA. Toward a psychobiology of posttraumatic self-dysregulation: reexperiencing, hyperarousal, dissociation, and emotional numbing. Ann N Y Acad Sci 2006 Jul;1071:110-24.
4. Hoge CW, McGurk D, Thomas JL, Cox AL, Engel CC, Castro CA. Mild traumatic brain injury in U.S. soldiers returning from Iraq. N Engl J Med 2008 Jan 31;358(5):453-63.
5. Shipherd JC, Keyes M, Jovanovic T, Ready DJ, Baltzell D, Worley V, Gordon-Brown V, Hayslett C, Duncan E. Veterans seeking treatment for posttraumatic stress disorder: what about comorbid chronic pain? J Rehabil Res Dev 2007;44(2):153-66.
6. Bertoli E, de Leeuw R, Schmidt JE, Okeson JP, Carlson CR. Prevalence and impact of post-traumatic stress disorder symptoms in patients with masticatory muscle or temporomandibular joint pain: differences and similarities. J Orofac Pain 2007 Spring;21 (2):107-19.
7. Spiro A 3rd, Hankin CS, Mansell D, Kazis LE. Posttraumatic stress disorder and health status: the veterans health study. J Ambul Care Manage 2006 Jan-Mar;29(1):71-86.
8. Etkin A, Wager TD. Functional neuroimaging of anxiety: a meta-analysis of emotional processing in PTSD, social anxiety disorder, and specific phobia. Am J Psychiatry 2007 Oct;164 (10):1476-88.
9. Sharp TJ, Harvey AG. Chronic pain and posttraumatic stress disorder: mutual maintenance? Clin Psychol Rev 2001 Aug;21(6): 857-77.
10. McLean SA, Caluw DJ, Abelson JL, Liberzon I. The development of persistent pain and psychological morbidity after motor vehicle collision: integrating the potential role of stress response systems into a biopsychosocial model. Psychosom Med 2005 Sep-Oct;67(5):783-90.
11. Sherman JJ, Carlson CR, Okeson JP, McCubbin JA. Posttraumatic stress disorder among patients with orofacial pain. J Orofac Pain 2005 Fall;19(4):309-17.
12. Olszewski TM, Varrasse JF. The neurobiology of PTSD: implications for nurses. J Psychosoc Nurs Ment Health Serv 2005 Jun;43(6):40-7.
13. deLeeuw R, Schmidt JE, Carlson CR. Traumatic stressors and post-traumatic stress disorder symptoms in headache patients. Headache 2005 Nov-Dec;45(10):1365-74.
14. Xydakis MS, Fravell MD, Nasser KE, Casler JD. Analysis of battlefield head and neck injuries in Iraq and Afghanistan. Otolaryngol Head Neck Surg 2005 Oct;133(4):497-504.
15. Clark ME, Bair MJ, Buckenmaier CC, Gironda RJ, Walker RL. Pain and combat injuries in soldiers returning from Operation Enduring Freedom and Iraqi Freedom: implications for research. J Rehabil Res Dev 2007;44(2):179-94.
16. Stalker CA, Russell BD, Teram E, Schachter CL. J. Providing dental care to survivors of childhood sexual abuse: treatment considerations for the practitioner. J Am Dent Assoc 2005 Sep;136 (9):1277-81.
17. van der Kolk BA. Clinical implications of neuroscience research in PTSD. Ann N Y Acad Sci. 2006 Jul;1071:277-93.
18. Wong M, Lytle WR. A comparison of anxiety levels associated with root canal therapy and oral surgery treatment. J Endod 1991 Sep;17(9):461-5.

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